Q) How is O_2 and CO_2 transported in human beings

Alveoli present in the lung is responsible for the transportation of O_2 and CO_2 in human beings. When the air containing 21% O_2 and 0.04% CO_2 comes through the nasal passage to the alveoli which has blood vessels connected to it. The air containing high concentration of O_2 diffuses to the blood present in the blood vessels and the blood containing high concentration of O_2 as compared to alveoli diffuses. Then the air containing CO_2 is breathen out and the blood containing O_2 distributes O_2 to the tissues of the body.

Q) How are the lungs designed in human beings to maximise the area for exchange of gases?

A primary bronchus divides into secondary bronchi, secondary into segmental bronchi, segmented bronchi into bronchioles which divides into

terminal bronchioles, respiratory bronchiole, alveolar sacs and alveoli.

Alveoli are small rounded pouches which are extremely thin walled and possess a network of capillaries over their surface.

Exercise

9. How are the alveoli designed to maximise the exchange of gasses.

Alveoli are pouch-like air sac that is made up of simple squamous epitholicum. It has a thin cell wall, the presence of millions of alveoli in the lungs provide ample surface area to facilitate gaseous exchange between the air in alveoli and blood in surrounding capillary. Oxygen diffuses across the alveolar and capillary wall into the blood stream while carbon dioxide diffuses from blood across the membrane walls into the alveoli

6. Why is the trachea provided with cartilaginous rings ?

When there is absence of air in the trachea it can be collapsed, to prevent this cartilage rings are supported to it.

4. What are the different ways in which glucose is oxidized to provide energy in various organisms?